

**KYIV DATABASE OF LUNAR OCCULTATIONS AND SOME PRELIMINARY RESULTS.**

L.V.Kazantseva, Astronomical Observatry of Kyiv National Taras Shevchenko University (Observatorna st.,3, Kyiv-53, Ukraine, 04053, [likaz@observ.univ.kiev.ua](mailto:likaz@observ.univ.kiev.ua)).

Since 1963 Astronomical Observatory of Kyiv National Taras Shevchenko University was the regional centre of occultation coordination. The collected results of observations of lunar occultations of stars and planets during 38 years are compiled in computer database [1]. The base included more than 24 thousand of observation results of 580 observers from 77 sites on the territory of Ukraine, Russia, Georgia, Belorus', Moldova, Lithuania, Uzbekistan.. The access to the information can be realised on a site of the Astronomical Observatory KU <http://www.observ.univ.kiev.ua/> or to the e-mail address [likaz@observ.univ.kiev.ua](mailto:likaz@observ.univ.kiev.ua)

The assembled material is analyzed and compared to the similar data of the world bank. The statistical analysis of the data of preliminary reduction has revealed a whole series of remarkable periodicity in O-C. Some authors [2,3,4,5] have analyzed observations of lunar occultations for long intervals of time and have pointed on periodicity in change of determined value O-C for distances between center of star and the Moon. Periodogram analysis of the results shows clear peaks on the certain frequencies in a range from 0 up to 0.2 cycles for lunation. Some significant peaks were identified by L.Morrison with the periods of change of arguments of used lunar ephemeris, periodic terms arising from the stellar reference frame [3].

It was applied a method of the spectral analysis of time series to results of processing of the lunar occultations obtained by different authors [1,2,3,6,] and it was received frequency periodogram of change of the residuals. Various methods of reductions and analysis with the various input data (lunar ephemeris, star catalogue, charts of the marginal zone of the Moon) point to existence peaks near to frequencies 0.08 and 0.16 cycles for lunation. The question concerning occurrence of these periodicity (i.e. about sources of mistakes in processing lunar occultations, which arise with such frequency) remains open.

**References:** [1] Kazantseva L.V. and Osipov A.K. (2002) *Kinem. Phys. Cel. Bodies*, 18, 179-187. [2] Brouwer D. and Watts C.B. (1947) *Astron J.*, 52, 169-176. [3] Morrison L.V. (1979) *Mon. Not. R. Astr. Soc.*, 187, 41-82. [4] Soma M. (1985) *Cel. Mechs.*, 35, 45-88. [5] Jordi C. and Rossello G. (1985) *Mon. Not. R. Astr. Soc.*, 225, 723-730. [6] Report of lunar occultation observations. ILOC (2002), 20, 1- 8.